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ABSTRACT OF THE DISCLOSURE

A process for manufacturing a semiconductor device, particularly a thin film transistor, by using a crystalline silicon film having excellent characteristics. The process comprises forming a silicon nitride film and an amorphous silicon film in contact thereto, introducing a catalyst element capable of promoting the crystallization of the amorphous silicon film by heating the amorphous silicon film, thereby crystallizing at least a part of the amorphous silicon film, and accelerating the crystallization by irradiating the silicon film with a laser beam or intense light equivalent thereto.